







X Collection

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LIBRARY OF CONGRESS  0 029 767 264 2	1798	11	QE1.D4- QE1.S23
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AN AUTOPHAGOUS LIZARD.—In a forested area near Nadzab, in the Markham Valley, British New Guinea, I frequently collected the gekkonid lizard, *Gehyra oceanica* (Lesson). On the night of May 7, 1944, I caught a particularly fine female of this species. Intending to photograph the specimen, I did not preserve it immediately, but left it overnight in a heavy canvas bag. The following day the lizard's tail was found to be missing, while the abbreviated reptile was suspiciously stouter. Pressure on the lizard's sides forced it to disgorge the missing member, already faded by digestive fluids. The organ had been swallowed in its entirety, tip first, sometime during the night. In this species the tail is long, depressed, and rather broad at the base, with serrated lateral edges; and in consequence, the reptile's capacity had been strained to the utmost. Investigation of the habits of *G. oceanica* threw some light on such apparently eccentric behavior. The species was found to frequent deep forests, where crepuscular conditions prevailed even throughout the day. Specimens were rarely seen abroad either by night or by day. Individuals could always be found, however, beneath loosened slabs of bark on large trees. Captive examples were positively thigmotactic, wedging themselves into any available crevice. Two stomachs that were examined contained coleopterous larvae and the remains of smaller gekkonids and such prey is probably captured beneath the bark. When grasped, the geckoes writhed with considerable agility, and unless seized by the anterior part of the body they would practice autotomy, the tail parting from the body at a point just posterior to the vent. In such cases the severed organ thrashed about for a minute or more. These facts suggest a reasonable explanation of the occurrence of "autophagy." For some reason, the characteristic autotomy took place in the bag, and coming in contact with its own but separated tail, the lizard swallowed the writhing object just as it might a small gecko or other prey.—WILFRED T. NEILL, *Augusta, Georgia*.

X-OL-31  
N3

Reprinted from COPEIA, 1947, No. 3, September 12

NOTES ON GEORGIA SNAKES OF THE GENUS *ELAPHE*.—The species of *Elaphe* in the southeastern United States present a series of taxonomic problems that can scarcely be solved by material from one state alone, but local lists may point the way to broader investigations. The following notes are based on all Georgia specimens of *Elaphe* that have come to my attention since 1934. Four species of the genus are found in the state. Ignoring the problem of subspecies, these are *guttata*, *obsoleta*, *confinis*, and *quadrivittata*.

*Elaphe guttata* shows no evidence of genetic intercourse with the others. In many examples the keels are indistinct or even lacking, a condition possibly correlated with fossorial tendencies. Although the species has been described as arboreal, all my specimens were found on the ground, in mole burrows, in the debris of rotting stumps, or beneath piles of hay in and about barns. Many corn snakes hibernate in old pine stumps on higher hillsides. The species was not found in the Appalachian province, but was taken from DeKalb County in the upper Piedmont, south to the Okefenokee Swamp and east to the coast, including several of the larger islands.

*Elaphe obsoleta* was collected in many localities from Rabun County in the Appalachian Mountains, southward to the Fall Line, and in certain Coastal Plain areas to be discussed separately. Throughout its Georgia range, the species exhibits considerable color variation. Black examples are common, but many areas yield adults of a gray shade, with distinct markings. In the lower Piedmont a common pattern consists of a dorsal "ladder" and a lateral stripe. Quadri-lineate specimens are of frequent occurrence in Fall Line localities, but these may be readily identified as *obsoleta* by the dark gray ground color. About 25 or 30 miles below the Fall Line, in southern Burke County, completely black *obsoleta* have been taken; and one spot, 11 miles west of Waynesboro, yields individuals of this color only. Burke County seems to represent the southern limit of the range of black rat snakes in the state. About 20 miles farther south, in Emanuel and Screven counties, the rat snakes are light gray with four black stripes, and with a squamation approaching that of *quadrivittata*. Postocular and interorbital stripes may be present or absent. The venter is strongly marked posteriorly with gray. Such specimens seem to indicate definite genetic intercourse between black and yellow rat snakes. About 30 miles still farther to the south, in Bulloch and Effingham counties, typical *quadrivittata* is found, its range extending thence into Florida.

Judging from the literature, the respective ranges of the black and the yellow forms are rather closely adjacent, but not overlapping, throughout the southeast. Two Florida records of *obsoleta* are very questionable, as indicated by Carr (1940, Univ. Fla. Pub., 3: 81). Intermediates have been noted by several workers. Thus Cope (under the name *Coluber* for this genus) describes his subspecies *lemniscatus* as being "intermediate between the *C. quadrivittatus* and the *C. obsoletus*"; and states that, while some specimens approached "*obsoletus*" others were distinguishable from the yellow form only by a darker coloration, and a broader lateral stripe (1898, Ann. Rep. U.S. Nat. Mus.: 849).

The situation is complicated by the widespread occurrence of light gray, spotted rat snakes. I have seen several such from the upper Piedmont. The upland specimens, however, are darker than typical *confinis*, and occur as isolated individuals in colonies of normal *obsoleta*. They seem to be black rat snakes that have retained the juvenile coloration longer than usual. True *confinis* is apparently lacking from the Georgia Piedmont. Populations of very light, spotted rat snakes are found from the Coastal Plain side of Augusta, Richmond County, southward for a distance of about 50 miles. No *confinis* was collected in the lower Coastal Plain, within the range of *quadrivittata*. It presumably occurs there, however, since gray rat snakes are widespread in northern Florida (Carr, op. cit.: 82).

A further complication is introduced by the type locality of *confinis*, supposedly Anderson, South Carolina. I have long suspected that Anderson was merely the shipping point for specimens sent to the U.S. National Museum by Miss Charlotte Paine (Mrs. M. E. Daniels); and that many of these were actually taken much farther south. Miss Paine's material included, in addition to *confinis* and "*Coluber spiloides*," such forms as *Hyla anderssonii* and *Farancia a. abacura*. While it is conceivable that these species range into the Piedmont along the Savannah River Valley, I have seen no evidence that any of them does so. It is scarcely credible that all should extend their distribution

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Reprinted from Copeia, 1947, No. 3, September 12

**RANA GRYLIO IN SOUTH CAROLINA.**—Several herpetologists have suggested that *Rana grylio* Stejneger would be found in South Carolina, but specific records from that state seem to be lacking. During the last week of July, 1946, I found the species to be abundant along the Combahee River, about 7 miles east of Yemassee, Beaufort County. The frogs were found in old, flooded rice-fields, now choked with various species of aquatic plants. Individuals were calling nightly from thick clusters of floating or emergent vegetation. None was found along the dikes or river banks, although these yielded large numbers of *R. clamitans*, *R. pipiens sphenoccephala*, and one *R. catesbeiana*. A particularly sonorous "pig-frog" apparently occupied the same spot each night, and grunted incessantly from dusk to dawn. At night, specimens could be readily approached by boat, and, blinded by the rays of a flash-light, could be seized by hand. Commonest associate of *R. grylio* in the Combahee marshes was *Alligator mississippiensis*. Many other species of reptiles and of amphibians were collected along the river bank, but none appeared to invade the rice-fields to any extent.—WILFRED T. NEILL, Department of Biology, Augusta Junior College, Augusta, Georgia.

X-QL 31  
.N3 #4

## Doubtful Type Localities in South Carolina

By WILFRED T. NEILL

The type of *Natrix fasciata pleuralis* Cope was stated to have been U.S.N.M. No. 1092, from "Mississippi" (Cope, Proc. U. S. Nat. Mus. 14, 1892: 672). However, Clay, redescribing the form of *N. sipedon pleuralis*, noted that No. 1092 does not fit the description and is a *fasciata* recorded in the accession catalog as from Fort Morgan, Alabama, a locality beyond the range of *pleuralis* (Copeia 4, 1938: 179). Clay further noted that in the same bottle with No. 1092 is another specimen bearing an old and faded label that seems to read "1080 *Nerodia fasciata* B. & G. Summerville, S. C." This is presumably a *pleuralis*, since Clay suggested that it may have been the actual type of Cope's form. Subsequent issues of the Checklist have given the type locality of *pleuralis* as "probably Summerville, South Carolina." This would indicate the town of that name in Dorchester County, since recent atlases list no other Summerville in the state.

Many years of collecting have indicated that *Natrix sipedon pleuralis* does not enter the Coastal Plain in the area between Macon, Georgia, and Columbia, South Carolina. The Piedmont race meets *N. s. fasciata* at the Fall Line with no overlapping and little evidence of intergradation (Neill, Copeia 4, 1946: 255). The occurrence of *pleuralis* in Dorchester County, in the lower Coastal Plain, is improbable. More to the point, I have collected extensively in this area, taking a goodly number of banded water snakes, all of which were typical *fasciata*. Even the fortuitous duplication of *pleuralis* characters is unlikely here. If No. 1080 is a *pleuralis*, it must have been collected elsewhere.

A possible explanation is afforded by examination of Cope's later work, "The Crocodilians, Lizards, and Snakes of North America" (Ann. Rep. U. S. Nat. Mus. 1898, 1900). This book contains references to No. 1142 from Somerville, South Carolina; Nos. 1184, 1612, 7302, 787, and 984 from Somerville, North Carolina; and Nos. 5158 and 4212 from Summerville, North Carolina. All these specimens, however, were collected by the same person, J. C. McNair, thus suggesting that the three localities are in reality one. Also listed from Somerville, North Carolina, are Nos. 6473 and 2146, no collector given; and No. 2330, collected by Dr. F. B. Hough. The correct locality is apparently a North Carolina one; and all the above specimens are of forms that might be expected in the vicinity of the present Summerville, Harnett County, North Carolina. The South Carolina record may have been a *lapsus calami* duplicated in the case of No. 1080.

However, there may have been a Summerville (or Somerville) that is no longer extant, in either of the Carolinas; or, Cope may have had a Mississippi specimen, incorrectly numbered. Accordingly, I suggest that the type locality of *Natrix sipedon pleuralis* Cope be considered unknown.

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## AN AMBYSTOMA EATS A SNAKE\*

By Wm. E. Duellman

The following incident took place in the Dayton Public Library Museum in the latter part of July, 1947. The observer was Mr. Kenneth Dearolf, Director of the museum.

A small specimen of *Thamnophis s. sirtalis* (Linne) was placed in a cage containing a large adult *Ambystoma t. tigrinum* (Green). The salamander immediately took notice of the snake and then quickly seized it by the head. Although the snake writhed about in its attempt to escape, the salamander did not release its hold. For the rest of the day the swallowing process was continued. The next morning, nearly twenty-four hours later, Mr. Dearolf found the salamander in good condition with a portion of the snake's tail still protruding from its mouth. During the morning the salamander finished its meal and has shown no ill effects from it. The *Thamnophis* measured about 170 mm. in length. The *Ambystoma* measured 211 mm. in total length.

436 Greenmount Blvd., Dayton, Ohio

\* Read at the 24th Annual Meeting of the A.A.A.S., Southwestern Division, at Las Vegas, New Mexico, May 3-5, 1948.

\* \* \*

## RANA GRYLIO IN TEXAS

By Robert L. Livezey and H. M. Johnson

The occurrence of *Rana grylio* in Texas has been suspected for some time. However, to our knowledge there exist no substantiating published records.

On the night of April 30, 1948, a mill pond 200 yards west of U. S. Highway 96, three and three-quarter miles south of Silsbee, Hardin County, Texas, was visited. From this pond the pig-like grunting call of this form was heard. Investigation resulted in the capture of two males. Four others were seen, but escaped. No females, eggs or tadpoles were noticed. The following night, Dr. L. A. Ramsey of Texas Christian University visited the same pond and collected five additional specimens.

This pond, located in the southern margin of the Big Thicket region of East Texas, is typical of the habitat occupied by this species in Louisiana. There is a surrounding forest primarily of cypress, pine, oak and magnolia. The pond is about five acres in extent, not over two feet in depth, and with a thick growth of aquatic plants consisting of reed, water lily, sedge, waterweed and grasses. A thick, gummy, black mud covers the bottom.

Both specimens are relatively small, the measurements being: snout to vent 65.5 mm, 94.7 mm; head width 22.8 mm, 33.7 mm; head length 25.0 mm, 38.8 mm; thigh 25.4 mm, 38.8 mm; shank 28.7 mm, 40.4 mm; foot 46.7 mm, 71.0 mm. Coloration of both individuals is typical. Dorsum dark green with scattered, irregular rust spots. Throat creamy-yellow; venter and legs mottled with black on white background.

Other toads and frogs in and near the pond were *Bufo valliceps*, *Bufo v. fowleri*, *Hyla cinerea*, *Acris crepitans*, *Rana catesbeiana*, *Rana clamitans* and *Rana sphenocephala*.

Sam Houston State Teachers College, Huntsville, Texas

Gift  
Rosa Allen  
Dec. 15, 1950





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Reprinted from COPEIA, 1948, No. 2, June 30.

**EXTRA-UTERINE EMBRYOS IN SNAKES.**—While dissecting a large female *Natrix sipedon fasciata* from Augusta, Georgia, I noticed a chalky, ovoid mass lying in the body cavity of the reptile. When tapped with the butt of a scalpel, the mass flaked off to reveal a well developed embryo, coiled in the characteristic prenatal fashion. Although brittle and heavily calcified, the embryo was remarkably well preserved. I have also seen this phenomenon of extra-uterine embryos in *N. s. pleuralis*; and was told of its occurrence in *Thamnophis radix*.

While it is possible that this is ectopic pregnancy, like that occasionally occurring in mammals, the degree of development of the embryos suggests that the encysted embryo developed normally in the extreme anterior part of the oviduct, and was crowded into the body cavity by the production of an unusually large complement of young; or that contractions of the oviduct during parturition began posterior to one of the embryos, forcing it in the wrong direction. The last theory seems most reasonable, explaining the large size of the embryos, and the fact that the known instances of this anomaly are confined to ovoviviparous species whose oviducts are often crowded with enormous numbers of young. The question arises as to whether such a misplaced embryo would calcify before necrosis began.

It is evident that the physiology of *Natrix* and *Thamnophis* is capable of counteracting such mishaps, for one of the parent reptiles had been in captivity for over a year; and there was no sign of tissue irritation in the peritoneum or viscera.—WILFRED T. NEILL, Department of Biology, Augusta Junior College, Augusta, Georgia.



Reprinted from COPEIA, 1948, No. 3, September 24.

**THE STATUS OF THE SALAMANDER *DESMOGNATHUS QUADRAMACULATUS AMPHILEUCUS*.**—In 1941 Bishop described *Desmognathus quadramaculatus amphileucus* on the basis of 3 specimens from Demorest, Habersham County, Georgia (Occ. Pap. Mus. Zool., Univ. Mich., 451: 12). The coloration of this salamander was unusual in that the snout, tip of tail, and limbs were whitish, while the remainder of the animal was black. When I read the description, it struck no chord of memory although I had collected extensively in northeastern Georgia. Upon examining my collection, however, I found many examples agreeing with *amphileucus* in coloration. A series of such specimens from Tiger, Rabun County, Georgia, was described as *D. q. quadramaculatus*, since they exceeded the supposed maximum size of *amphileucus* and the pattern of the latter was not developed in the larger examples.

During the summer of 1947, Mr. Robert L. Humphries and I collected in northern Georgia and adjacent areas. We found no *D. quadramaculatus* in the immediate vicinity of Demorest, but took a few specimens not far to the north, near the Habersham-Rabun County line. In life these salamanders were scarcely distinguishable in coloration from typical *quadramaculatus*, except that the snout was tan. After three days in preservative, however, the snout, tip of tail, and limbs had become whitish with vague mottlings. The smaller specimens, at least, might have been called *amphileucus*. Just above the North Carolina-Georgia border, on U. S. Highway No. 23, we took *D. quadramaculatus* that changed but very little in preservative.

Later in the summer I revisited the Tiger locality, collecting a series of the form at the same spot where it had been taken several years before. All displayed brownish legs, tan snout, and horn-colored tail tip. After a few days in preservative these areas became very light, almost white in the smaller examples. These specimens, and the original Tiger specimens, now mostly resemble *amphileucus* in coloration.

I am not sufficiently familiar with typical *quadramaculatus* to say whether it too might develop comparable light areas after some time in preservative. Probably it does; Cope notes that, in 20 specimens of "*D. nigra*" examined by him, the coloration was black above and below, except the muzzle from between the eyes, the lower jaw, the end of the tail, and the soles of the feet, all of which were brown (1889, *Batrachia* of North America: 199).

I do not believe that the *amphileucus* pattern is present to any noticeable degree in living specimens. It is certainly not developed throughout most of the range of the form as mapped by Bishop (1943, *Handbook of Salamanders*: 211). Wood mentions collecting several specimens 3 miles west of Demorest, but unfortunately he does not describe their appearance in life (1947, *COPEIA*, 1947: 273).

Netting states that he is dubious of the validity of *D. q. amphileucus*, "at least as it is now defined" (1945, *Ecology*, 26: 105). It seems to me that the southern specimens can be distinguished from the more northern ones by certain characters cited by Bishop. Thus, of all the specimens collected between the type locality and the North Carolina border, the largest, taken 18 miles north of Demorest, measures 146 mm. in total length. This is considerably less than the maximum for typical *quadramaculatus*. In all but the largest specimens from this region, the eye is very prominent, its horizontal diameter being contained about 1.2 times in the length of the snout. In most of the specimens there are less than 2 intercostal spaces between the appressed limbs.

On the basis of material in my collection, *D. q. amphileucus* seems valid, but should be redefined as follows: Size rarely, if ever, exceeding 150 mm. total length, and usually much less; one to two intercostal spaces between the appressed limbs; eye large and prominent, its horizontal diameter contained less than 1.5 times in snout length, about 1.2 times in the average adult. Snout, tip of tail, and sometimes limbs slightly lighter than the remainder of the body, particularly in small examples; these areas often becoming much lighter in preservatives. Range, the southern Appalachians from about the North Carolina-Georgia border southward through Habersham County, Georgia.—WILFRED T. NEILL, *Dept. of Biology, Augusta Junior College, Augusta, Georgia.*

Reprinted from COPELA, 1948, No. 4, December 31.

An Unusual Variant of *Plethodon glutinosus* in  
South Carolina<sup>1</sup>

By WILFRED T. NEILL

DURING the summer of 1947 Mr. Robert L. Humphries and I found a colony of peculiar salamanders at a locality about 7 miles north of Tillman, Jasper County, South Carolina. These salamanders in some respects resembled *Plethodon glutinosus glutinosus* (Green) from the Upper Coastal Plain of Georgia and South Carolina, but also showed some interesting divergences from that form in morphology, coloration, habits, and habitat. Special effort was made to collect the unusual salamanders, and eventually 17 specimens were taken, all being found in one small area of creek swamp.

<sup>1</sup> I am indebted to Dr. Sherman C. Bishop for suggestions; to Mr. Karl P. Schmidt for the loan of specimens and for helpful advice; to Mr. Francis L. Rose for many specimens; and to Mr. Robert L. Humphries for assistance in collecting much of the material on which this paper is based.

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September 15

## HERPETOLOGICAL NOTES

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Reprinted from COPEIA, 1949, No. 3, September 15

THE STATUS OF BAIRD'S CHORUS-FROG.—In the fourth edition of the *Checklist*, Baird's chorus-frog was listed as *Pseudacris nigrita feriarum*, but in the fifth edition it was given full specific rank, although *triseriata*, *septentrionalis*, *verrucosa*, and the specifically distinct *darkii* were still listed as subspecies of *P. nigrita*. Possibly this action was predicated upon records suggesting that the range of *feriarum* overlapped that of some other member of the *nigrita* group. However, the resultant arrangement is unsatisfactory.

In the first place, *feriarum* is scarcely distinct from *triseriata*, if indeed the two are not synonymous. The leg of *triseriata* is said to be slightly shorter, and the dorsal stripes of *triseriata* are supposedly somewhat wider. The two have so often been confused that it is impossible to determine their respective ranges from the literature. The fifth edition of the *Checklist* gives the range of *feriarum* as "New Jersey, Pennsylvania, and possibly into South Carolina and northwestern Florida"; *triseriata* is stated to range from New York west to Idaho, south to Louisiana. Conant, however, lists the chorus-frogs of Delaware and the Eastern Shore counties of Maryland and Virginia as *triseriata*, crediting the identification to C. H. Walker (1945). An annotated checklist of the amphibians and reptiles of the Del-Mar-Va Peninsula: 3). Ackroyd and Hoffman call *feriarum* "the common Virginia species" (1946, COPEIA, 4: 257). Taylor records *feriarum* from Arkansas (1935, Univ. Kansas Sci. Bull., 22: 209); Black and Dellinger quote Taylor's record but otherwise list only *triseriata* from Arkansas (1938, Occ. Pap. Univ. Arkansas Mus., 612: 18).

A form of upland chorus-frog ranges at least from the higher areas of Virginia southward through the Piedmont of North Carolina, South Carolina, and Georgia. This frog has generally been called *feriarum* (Chamberlain, 1939, Charleston Mus. Leaf., 12: 16; Ackroyd and Hoffman, *op. cit.*: 257; Hoffman, 1945, *Herpetologica*, 2: 201; Neill, 1947, COPEIA, 4: 272; etc.). Presumably it ranges farther north, to Carlisle, Pennsylvania (the type locality), and beyond (cf. Pawling, 1939, *Herpetologica*, 1: 167). The taxonomic and geographic relationship of this frog to *triseriata* remains to be worked out; but certainly the Piedmont form, generally accepted as *feriarum*, meets and intergrades with typical *nigrita* along the Fall Line of Georgia and South Carolina.

The dark or spotted coloration and the proportionately greater leg length and sharper snout of *nigrita* develop almost imperceptibly in the Fall Line region. Thus, specimens from upper Columbia County, Georgia, consistently display *feriarum* form and coloration, while those taken 10 or 15 miles farther south, on the northwestern side of Augusta, Richmond County, are occasionally of *nigrita* coloration, although of *feriarum* proportions (cf. Neill, *op. cit.*: 272). Series collected on the southeastern or Coastal Plain side of Augusta contain a higher percentage of specimens of *nigrita* coloration. About 10 miles below this point, near Tahoma, Richmond County, one encounters the first suggestions of *nigrita* form; *feriarum* coloration still predominates. About 5 to 10 miles farther south, in southern Richmond and northern Burke counties, some specimens could be called typical *nigrita* and others are intermediate. The influence of *feriarum* is not evident below Burke County; series from Screven County southward are typical *nigrita*. A similar situation exists in South Carolina, *feriarum* occurring in Edgefield and upper Aiken counties (Piedmont), intermediates in lower Aiken and Barnwell counties (near the Fall Line), and *nigrita* from Allendale County southward.

Accordingly, I believe that the Piedmont chorus-frog should be known as *Pseudacris nigrita feriarum* (Baird). Indirect evidence confirming this contention is the fact that *feriarum* is a logical development in the chorus-frog complex, standing intermediate between the blunt-headed, short-legged, striped populations to the northwest, and the acuminate-headed, long-legged, spotted populations to the southeast.

The occurrence of *P. n. feriarum* in the Apalachicola ravines of northwestern Florida is not inconsistent with this allocation (Carr, 1940, Univ. Fla. Pub., 3: 56). The western portion of the Georgia Coastal Plain is considerably higher than the eastern, rising to altitudes of 650 to 700 feet between Macon and Columbus. The western portion of the Fall Line Hills, 350 to 700 feet in elevation, merge into the relatively high Dougherty Plain, which is sharply differentiated from the Altamaha "Upland" to the east and south (Veatch and Stephenson, 1911, *Geol. Surv. Georgia*, 26: 27 *et seq.*). Numerous lowland

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## HERPETOLOGICAL NOTES

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Near Nadzab, in the Markham Valley of northeast New Guinea, I suffered another unpleasant snake bite, oddly enough from a supposedly harmless colubrine snake. Walking about in a patch of jungle, I noticed a small tree snake, *Ahaetulla papuae*, lying in a tangle of vines. I managed to grasp the snake, and it retaliated by biting down upon the little finger of my right hand. The snake was a very small specimen of its kind, scarcely 18 inches long, and its tiny teeth were unable to break the skin. It retained its hold, however, chewing away with a great show of ferocity. I walked back to camp with the little reptile, amused by its bull-dog efforts. Somewhere along the way its enlarged posterior maxillary teeth must have penetrated the skin, although I felt no sensation. About 10 minutes later I noticed two tiny punctures in the skin where the little creature had bitten. Within another 10 minutes the finger was red and swollen, with a white spot about each tiny puncture. The swelling progressed rapidly, within an hour's time involving the digits, palm, back of the hand, and most of the forearm. Pain was intense, much more so than in the *Demansia* bite, but still less than in most crotalid bites. No further symptoms developed except a painful swelling in the axilla of the bitten arm. The pain and swelling slowly subsided during the next four days, but the bitten finger remained tender for fully a week. I had been bitten many times by 3- and 4-foot adults of *A. papuae* with no ill effects beyond a few small scratches; however, the larger specimens were never permitted to retain their hold or to embed the large back teeth for any length of time. Of course, some idiosyncratic reaction is possible, but this seems unlikely. It seems probable that other supposedly harmless snakes may have toxic salivas that are injected into prey by means of the enlarged rear teeth.—WILFRED T. NEILL, Department of Biology, Augusta Junior College, Augusta, Georgia.

X-OK 31.N. #10

Gift  
Rosa Allen  
Dec. 15, 1950



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.N3

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Reprinted from COPEIA, 1949, No. 3, September 15

NEST AND EGGS OF THE SOUTHERN DUSKY SALAMANDER, *DESMOGNATHUS FUSCUS AURICULATUS*.—Nests and eggs of the northern dusky salamander, *Desmognathus f. fuscus*, have been several times described, but nothing seems to have been recorded concerning the breeding habits of the southern subspecies, *D. f. auriculatus*. On June 16, 1948, a nesting female of this form was discovered on the Coastal Plain side of Augusta, Richmond County, Georgia. The nest was a shallow depression beneath a scrap of bark at the edge of a sandy spring run. The female, a small specimen of 40 mm. snout-vent length, was coiled about the eggs. The eggs, six in number, averaged 7.7 mm. in diameter. Four of the eggs were held together by thread-like extensions of the outer envelope; the other two were separate. All the eggs contained large, well developed embryos, whose spasmodic movements could be observed from time to time. The nest was transferred to a container, and in the process of transference the eggs were rolled about a bit. The female made no attempt to reassemble them later. Both recently hatched larvae and females with ovarian eggs had been collected near Augusta a few days previously; evidently the breeding season is an extended one in this region.

Augusta lies on the southern edge of the area of intergradation of *Desmognathus f. fuscus* and *D. f. auriculatus*. Specimens from the southeastern or Coastal Plain side of Augusta are usually small and dark, with a russet stripe on the dorsal surface of the tail, two rows of white spots along the sides, an orange-red mark between the eye and the angle of the jaw, and a grayish, mottled venter. Thus they seem referable to *auriculatus*, rather than to the typical subspecies.—WILFRED T. NEILL and FRANCIS L. ROSE, Augusta, Georgia.

X-QL 31  
N3 #12

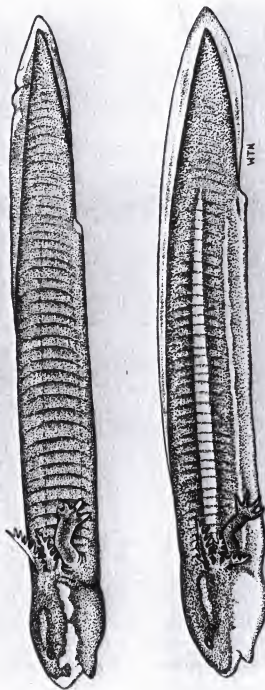


Fig. 1: UPPER: *Siren i. intermedia*, 55.5 mm. total length. Emanuel County, Georgia.  
LOWER: *S. lacertina*, 38.8 mm. total length. Emanuel County, Georgia.

X-QL 31

.N3 #13

Taxonomy, Nomenclature, and Distribution of  
Southeastern Cricket Frogs, Genus Acris

WILFRED T. NEILL



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Vol. 43, No. 1, pp. 152-156, January, 1950

The University Press  
Notre Dame, Ind.



NOTES ON THE FLORIDA PANTHER, *FELIS CONCOLOR CORYI*  
BANGS

BY ROSS ALLEN

In the past there has been much controversy as to the panther's ability to scream. In this connection the following observations seem noteworthy. In 1938 I built a round corral, 75 feet in diameter, for the purpose of making motion pictures of Florida animals. In this corral a female Florida panther from time to time would voice a series of screams. She always stopped when anyone approached, however, and although her cries were frequently heard, she was seldom caught in the act of vocalizing. I took to hiding in the bushes, down



PLATE I

Female panther from Collier County, Florida

wind, in the hope of seeing the panther scream. Eventually my patience was rewarded. The panther stood with her neck held straight out, and with her mouth pointed toward the ground. She then opened her mouth to about half its possible gape and voiced a series of loud, grating shrieks. The scream of this panther could be likened to a high, rasping human voice loudly shrieking "Ouch!", the sound being prolonged for about three or four seconds, and repeated from three to seven times in succession.

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X-QL 31. P. 10 #15

Excerpt from Canadian Entomologist September 1928.

NOTES ON THE BIOLOGY OF STAGMOMANTIS CAROLINA.  
(ORTHOPTERA, MANTIDAE).

BY R. A. ROBERTS,

Iowa State College, Ames, Ia.

My first work with the common mantid, *Stagmomantis carolina* John. began accidentally. One afternoon in early May, at Dallas, Texas, a number of egg masses of the mantid were placed on my desk for inspection. In looking them over I noticed that several had been parasitized and that in others the nymphs had already emerged. I paid very little attention to the unhatched eggs. The next morning May 7, 1927, my desk was covered with numbers of ungainly little brownish green creatures that raced madly about and made frantic efforts to hide behind books and papers. Thirty of these mantid nymphs were captured and placed under a glass lantern globe. A week later a second egg mass hatched. These two broods, together with a stray nymph I found, furnished me with material for observations throughout the summer.

To Mr. E. W. Laake of the U. S. Bureau of Entomology I am indebted for caring for the mantids while I was away from the office on field work. Mr. A. N. Caudel of the U. S. National Museum has very kindly identified the mantids. The parasitic diptera were determined by Dr. J. M. Aldrich.

## BREEDING CAGES.

For breeding cages, glass lantern globes 12 inches tall and 6 inches in diameter proved very successful. The open tops of these cages were covered with cheesecloth. Strips of paper or gummed labels stuck on the inner surface of the glass made it easy for the mantids to crawl about the sides and top of the cages. These glass globes were then placed in earthenware saucers. Within the cage a hackberry twig with several leaves attached was held upright in a glass vial partially filled with water and plugged with cotton. The mantids spent most of their time on these leaves or on the roof of the cage. It was important that the cages never be placed in strong, direct, summer sunshine as death to the insect nearly always resulted from overheating in this manner.

## FOOD

It was soon discovered that the mantids were cannibalistic. When the nymphs were not fed during the first two days following hatching, they began eating each other. For the first few weeks they were fed entirely on aphids from a cottonwood tree. This was done by merely breaking off aphid infested twigs and placing them in the cages. After this they were given a diet consisting almost entirely of house-flies. On a few occasions they were offered other food which they usually accepted. I can corroborate the statement of Rau that mantids will not eat the larvae of the bag worm. When flies were placed in a cage, the mantid usually took a position on a twig near the side of the cage and rapidly caught the flies as they flew or crawled near him. Often a mantid would be greedily

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THE WINTERING HABITS OF MUSCOID FLIES  
IN IOWA

BY

R. A. ROBERTS.

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COLUMBUS, OHIO,  
December, 1930.

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X-QL 31.26 #17

MYIASIS IN JACK RABBITS, *LEPUS CALIFORNICUS*  
*TEXIANUS*

RAIFORD A. ROBERTS

Bureau of Entomology, U. S. Department of Agriculture

*Reprinted from the Journal of Parasitology*  
*December, 1931, Vol. XVIII, pp. 102-104*

ISSUED, DECEMBER 7, 1931

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X-QL 31 ZC #18

Reprinted from Ecology, Vol. XIV, No. 3, July, 1933

ACTIVITY OF BLOWFLIES AND ASSOCIATED INSECTS AT  
VARIOUS HEIGHTS ABOVE THE GROUND

**Additional Notes on Myiasis in Rabbits (Dipt.:  
Calliphoridae, Sarcophagidae).**

By R. A. ROBERTS, Division of Insects Affecting Man and  
Animals, Bureau of Entomology, U. S. Department of  
Agriculture.

The frequency of screw worm infestations in *Lepus californicus texianus* Waterhouse, the common Texas jack rabbit, at Uvalde, Texas, has led to the conclusion that myiasis in rabbits is not uncommon in nature.

Johannsen, in 1926, wrote of the occurrence of larvae of *Wohlfahrtia vigil* Walk. in young rabbits reared in the open at Ithaca, N. Y. He has continued to observe attacks by this species on rabbits.

In 1931 the author reported several cases in which blowfly attacks on jack rabbits followed either gunshot wounds or lesions caused by the larvae of *Cuterebra*. These instances occurred in 1930, and since then two additional cases of infestations of gunshot wounds have been observed. These are here described in detail, the *Sarcophaga* being determined by David G. Hall.

As soon as the rabbits in the two cases were killed collections of larvae from the wounds, together with the flesh surrounding the affected area, were immediately removed from the animal and placed in quart Mason jars containing sifted sand. These jars were capped with lids of 60-mesh wire cloth and placed in fly-proof cages in a fly-proof insectary. No subsequent fly infestation was therefore possible.

*Case 1.* On July 24, 1931, an adult jack rabbit weighing 6½ pounds was killed in dense mesquite brush. An infested wound 30 by 50 mm. was found on the left rump at the base of the tail, extending through the fleshy portion to the inside of the leg where it again opened. It was apparently caused by a small-caliber rifle. Some of the fly larvae present were mature, and it appeared that others had migrated. This suggested an old wound. A seropurulent discharge was occurring, and the wound had an extremely foul odor. The larvae had worked entirely through the leg, and additional fly eggs had been de-

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Vol. XLII, September, 1934.

SOME INSECTS COLLECTED IN MEXICO, MOSTLY  
IN ASSOCIATION WITH MAN AND ANIMALS  
OR ANIMAL PRODUCTS

BY RAIFFORD A. ROBERTS

ASSISTANT ENTOMOLOGIST, DIVISION OF INSECTS AFFECTING MAN  
AND ANIMALS, BUREAU OF ENTOMOLOGY

During April, 1931, the author travelled by automobile from the Mexican plateau *via* Victoria to the Gulf of Mexico. Observations and collections were made of insects which affect man and animals. At San Luis Potosi and Victoria flies were trapped in cone traps baited with meat. Here and at Tampico pint Mason jars, each containing a 4-ounce piece of meat on 2 inches of sand, were exposed and from them meat-breeding flies and their associated insects were reared.

San Luis Potosi, S. L. P., stands 6,290 feet above the sea-level on the great plateau of Mexico. Although south of the Tropic of Cancer, at latitude 22° and longitude 100°, the climate, because of the altitude, is cool and temperate. Low, rough, and jagged hills dot a table-land thinly covered with cactus and sparse vegetation. The annual rainfall is low, but sufficient humidity occurs to permit the breeding of many insects, including myriads of flies and their predators and numerous parasites of man and animals. A mountain chain, the Sierra Madre Oriental, forms the eastern margin of the plateau. Passing through this range, about 150 miles northeast of San Luis Potosi, one abruptly descends from the mountains to a coastal plain. Here, at 1,473 feet, is Ciudad Victoria, surrounded by orange and avocado



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SOME NORTH AMERICAN PARASITES  
OF BLOWFLIES

BY

R. A. ROBERTS

(Contribution from Bureau of Entomology and Plant Quarantine)

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Vol. 50, No. 6 : : : Washington, D. C., March 15, 1935  
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X-OL 31. R6 #22

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Vol. XXX, No. 1 March, 1937

## BIOLOGY OF THE MINOR MANTID, *LITANEUTRIA* MINOR SCUDDER (ORTHOPTERA, MANTIDAE)

RAIFORD A. ROBERTS,<sup>1</sup>

Bureau of Entomology and Plant Quarantine,  
Washington, D. C.,

At the very edge of the Rio Grande Plain where rough country marks the sudden ascent to the Edwards Plateau, Uvalde, Tex., lies just below the Balcones Escarpment. Here two geographic divisions of Texas merge, and a diversity of animal and insect life is represented. *Litaneutria minor* Scudder, a small mantid common in the dry West, is sometimes encountered here frequenting low rocky ridges sparsely covered with bunch grass. Less often it is found in low flats where mesquite grass predominates.

These mantids are seldom seen by the casual observer, for their color is such that they are almost invisible, and usually they must be detected by their movement, but a little patient searching usually yields a number of specimens. The insects are not often found on vegetation, as they prefer to run about on the ground and to seek their prey among rocks and short grass stems.

From 1923 to 1934 many records were made of the habits and distribution of this species, and during the summer of 1933 rather complete notes were taken on its life history.

*Litaneutria minor* was described in the genus *Stigmatoptera* by Scudder in 1871,<sup>2</sup> and was transferred to the genus *Litaneutria* by him in 1896.<sup>3</sup>

### DISTRIBUTION

The range of *Litaneutria minor* in North America indicates an adaptation to the dry areas of the West, where it thrives on soil bearing little vegetation. The mantid is found in British Columbia, Montana, Idaho, Wyoming, Nevada, Utah, Colorado, South Dakota, Kansas, Nebraska, Oklahoma, Texas, New Mexico, Arizona, California, and Mexico.

<sup>1</sup>The author is indebted to the late A. N. Caudell for the determination of material, to Ralph Connor for assistance in rearing specimens in the laboratory, and to Miss Claudelle Lewis for preparation of the drawings.

<sup>2</sup>Scudder, S. H. Notes on the Orthoptera collected by Dr. F. V. Hayden in Nebraska. Final Report of the U. S. Geological Survey of Nebraska, pp. 249-261, 1872.

<sup>3</sup>Scudder, S. H. Index to the Mantidae of North America, North of Mexico. Canad. Ent., Vol. 28, pp. 207-215, illus.

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BIOLOGY OF THE BORDERED MANTID,  
STAGMOMANTIS LIMBATA HAHN  
(ORTHOPTERA, MANTIDAE)

BY

RAIFORD A. ROBERTS

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